

78

Notice of Allowability	Application No.	Applicant(s)	
	09/926,033	OOHASHI ET AL.	
	Examiner	Art Unit	
	John S. Chu	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/31/05.
2. ☒ The allowed claim(s) is/are 1,3-13,15-18 and 20-29.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

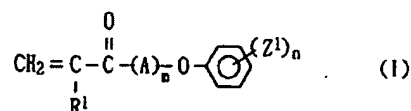
Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: The claimed invention is drawn to the following:

1 (previously presented): A photosensitive resin composition comprising
 (A) a carboxyl group-containing binder polymer which contains styrene or a styrene derivative as a copolymerized constituent,
 (B) a 2,4,5-triarylimidazole dimer as a photo-polymerization initiator, and
 (C) a photo-polymerizable compound having in its molecule at least one polymerizable ethylenically unsaturated bond which comprises a compound represented by the general formula (I)



wherein R^1 is a hydrogen atom or a methyl group, A is an alkyleneoxy group of 2 to 6 carbon atoms, Z^1 is a halogen atom, an alkyl group of 1 to 20 carbon atoms, a cycloalkyl group of 3 to 10 carbon atoms, an aryl group of 6 to 14 carbon atoms, an amino group, an alkylamino group of 1 to 10 carbon atoms, a dialkylamino group of 2 to 20 carbon atoms, a nitro group, a cyano group, a mercapto group, an alkylmercapto group of 1 to 10 carbon atoms, an allyl group, a hydroxyalkyl group of 1 to 20 carbon atoms, a carboxyalkyl group wherein the alkyl group has 1 to 10 carbon atoms, an acyl group having an alkyl group of 1 to 10 carbon atoms, an alkoxy group of 1 to 20 carbon atoms or a group containing an heterocyclic group, m is an integer of 6 to 20, and n is an integer of 0 to 5.

The inventive step of the claimed invention to the photosensitive resin is found in the particular use of the photo-polymerizable compound of formula (I). The use of the compound of formula (I) in the photosensitive composition as stated by applicant serves to give improved adhesion and no scumming upon development. The declaration submitted August 31, 2005, demonstrates the specific experiment requested by the Office which uses a nonylphenoxyhexaethylenoxy acrylate in the composition with the other ingredients stated on page 7, paragraph 9 of the Office action mailed June 1, 2005. The results when using the

Art Unit: 1752

photopolymerizable compound without a 2,4,5-triarylimidazole dimer as claimed fails to give the improved adhesion as demonstrated by the claimed invention. (the adhesion test gives a thickness of the width of the smallest patterned structures that remained after development, the inventive compositions retained structures that were 20 um in width while the prior art compositions show an adhesion of the smallest patterned images to be 32 um in width.)

Because applicants have demonstrate that the claimed invention provides an unexpected results with respect to improved adhesion and no scumming over the prior art references used in the 103 rejection. The applicants have demonstrated that their inventiion merits secondary considerations for patentability for unexpected results, thus the evidence is sufficient to overcome the *prima facie* case of obviousness given the rejections outstanding in the case. Accordingly, claims 1, 3-13, 15-18, and 20-29 are seen as allowable and passed to issue.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

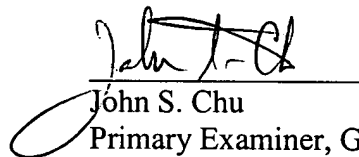
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for the USPTO is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Art Unit: 1752

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John S. Chu
Primary Examiner, Group 1700

J.Chu
November 14, 2005